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(21) International Application Number: PCT/US98/12099 (22) International Filing Date: 12 June 1998 (12.06.98)  (30) Priority Data: 60/049,410 12 June 1997 (12.06.97) US  (71) Applicant: RESEARCH CORPORATION TECHNOLOGIES, INC. [US/US]; Suite 600, 101 North Wilmot Road, Tucson, AZ 85711-3335 (US). (72) Inventor: KOIDE, Shohei; 236 Oakdale Drive, Rochester, NY 14618 (US). (74) Agent: VIKSNINS, Ann, S.; Schwegman, Lundberg, Woessner & Kluth, P.O. Box 2938, Minneapolis, MN 55402 (US).		(81) Designated States: AU, CA, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.  (88) Date of publication of the international search report: 4 March 1999 (04.03.99)	
(54) Title: ARTIFICIAL ANTIBODY POLYPEPTIDES			
<pre>       Ndef          PstI          EcoRI       1           11           21           31           41       mq VSDVPRDLEV VAATPTSLLI SWDAPAVTVR YYRITYGETG GNSPVOEFTV                 A           B           C           D                  SalI          SacI          XhoI                 51           61           71           81           91                 PGSKSTATIS GLKPGVDYTI TTYAVTGRGD SPASSKPISI NYRT                 E           F           G           </pre>			
(57) Abstract			
<p>A fibronectin type III (Fn3) polypeptide monobody, a nucleic acid molecule encoding said monobody, and a variegated nucleic acid library encoding said monobody, are provided by the invention. Also provided are methods of preparing a Fn3-polypeptide monobody, and kits to perform said methods. Further provided is a method of identifying the amino acid sequence of a polypeptide molecule capable of binding to a specific binding partner (SBP) so as to form a polypeptide:SSP complex, and a method of identifying the amino acid sequence of a polypeptide molecule capable of catalyzing a chemical reaction with a catalyzed rate constant, <math>k_{cat}</math>, and an uncatalyzed rate constant, <math>k_{uncat}</math>, such that the ratio of <math>k_{cat}/k_{uncat}</math> is greater than 10.</p>			

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/12 C07K14/78 C12N15/70 C12N1/21

According to International Patent Classification (IPC) or to both national classification and IPC

## 3. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

EPC 6 C07K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	K. ELY ET AL.: "Common molecular scaffold for two unrelated RGD molecules." PROTEIN ENGINEERING, vol. 8, no. 8, August 1995, pages 823-827, XP002088954 Oxford, GB see the whole document ---	1,2,4-6
A	A. MAIN ET AL.: "The three-dimensional structure of the tenth type III module of fibronectin: An insight into RGD-mediated interactions." CELL, vol. 71, no. 4, 13 November 1992, pages 671-678; XP002088955 Cambridge, MA, USA cited in the application see the whole document --- -/--	1-39

a

Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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# INTERNATIONAL SEARCH REPORT

Internatl Application No

PCT/US 98/12099

## (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	<p>S. KOIDE ET AL.: "Directed evolution of fibronectin type III domain to novel ligand binding proteins."  THE FASEB JOURNAL,  vol. 11, no. 9, 31 July 1997, page A837  XP002088956  Bethesda, MD, USA  see abstract M40</p> <p>---</p>	1-39
P, X	<p>S. KOIDE ET AL.: "Directed evolution of fibronectin type III domain to novel ligand binding proteins."  THE FASEB JOURNAL,  vol. 11, no. 9, 31 July 1997, page A1155  XP002088957  Bethesda, MD, USA  see abstract 1739</p> <p>-----</p>	1-39